

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 **Claim 1 (currently amended):** A transmission power
2 control method for controlling the power to transmit to a
3 distant party, comprising the steps of:
4 controlling an adjustable digital-to-analog converter
5 for generating an analog baseband signal to be
6 input to a modulator;
7 modulating said baseband signal for frequency-converting
8 ~~a transmission~~ said baseband signal to a modulated
9 signal in an IF band;[[,]
10 inputting said modulated signal into an amplifier unit
11 including a plurality of variable power amplifiers,
12 and
13 individually controlling each of said an amplifier unit
14 ~~comprising a plurality of~~ variable power amplifiers
15 for variably amplifying the modulated ~~transmission~~
16 ~~signal modulated by the modulator~~ for transmission
17 without further modulation.

1 **Claim 2 (previously presented):** A transmission power
2 control method according to claim 1, wherein a control ratio
3 of the variable power amplifiers is modified and at least one

4 of series and parallel control in a control range is made in
5 the controlling a plurality of variable power amplifiers step.

1 **Claim 3 (original):** A transmission power control method
2 according claim 2, further comprising:

3 a detection step of detecting a state of at least
4 one of a local station and a distant station;
5 and
6 a modification step of modifying the control ratio
7 according to the detected state.

1 **Claim 4 (previously presented):** A transmission power
2 control method according to claim 3, wherein a plurality of
3 states of at lest one of the local station and the destination
4 station are detected in the detection step, and wherein the
5 control ratio is modified by using fuzzy control rules and
6 fuzzy inference that are based on the plurality of states in
7 the modification step.

1 **Claim 5 (original):** A transmission power control method
2 according to claim 3, wherein the control ratio according to
3 the state of at least one of the local station and the distant
4 station is adaptively modified in the modification step.

1 **Claim 6 (original):** A transmission power control method
2 according to claim 1, wherein a control sensitivity of each of

3 the plurality of variable power amplifiers differs from each
4 other.

1 **Claim 7 (previously presented):** A transmission power
2 control method for controlling a power to transmit to a
3 distant party, comprising the steps of:

4 controlling a plurality of voltage controllers; and
5 controlling, using said plurality of voltage
6 controllers, a power amplifier for amplifying a
7 transmission signal via separate bias systems.

1 **Claim 8 (previously presented):** A transmission power
2 control method according to claim 7, wherein a control ratio
3 of the voltage controllers is modified and at least one of
4 series and parallel control in a control range is made in the
5 voltage controller controlling step.

1 **Claim 9 (previously presented):** A transmission power
2 control method according to claim 8, further comprising:
3 a detection step of detecting a state of at least one of
4 a local station and a distant station; and
5 a modification step of modifying the control ratio
6 according to the detected state.

1 **Claim 10 (previously presented):** A transmission power
2 control method according to claim 9, wherein a plurality of

3 states of at least one of the local station and the
4 destination station are detected in the detection step, and
5 wherein the control ratio is modified by using fuzzy control
6 rules and fuzzy inference that are based on the plurality of
7 states in the modification step.

1 **Claim 11 (original):** A transmission power control method
2 according to claim 9, wherein the control ratio according to
3 the state of at least one of a local station and a distant
4 station is adaptively modified in the modification step.

1 **Claim 12 (original):** A transmission power control method
2 according to claim 7, wherein a control sensitivity of each of
3 the plurality of variable power amplifiers differs from each
4 other.

1 **Claim 13 (currently amended):** A radio communications
2 apparatus equipped with a transmission power control feature
3 for controlling a transmission power to be transmitted to a
4 distant station, comprising:
5 a variable power amplification unit including:
6 an adjustable digital-to-analog converter for generating
7 an analog transmission signal,
8 a modulator for inputting said analog transmission
9 signal and frequency-converting the transmission
10 signal to a signal in an IF band, and

11 an amplifier unit comprising a plurality of variable
12 power amplifiers for variably amplifying the
13 transmission signal modulated by the modulator for
14 transmission without further modulation; and
15 a variable power amplification control unit for
16 individually controlling the variable power
17 amplifiers of the amplifier ~~variable power~~
18 ~~amplification~~ unit.

1 **Claim 14 (previously presented):** Radio communications
2 apparatus according to claim 13, wherein the variable power
3 amplification control unit modifies a control ratio of the
4 variable power amplifiers and makes at least one of series and
5 parallel control in the control range.

1 **Claim 15 (previously presented):** Radio communications
2 apparatus according to claim 14, further comprising:
3 a state detection unit for detecting a state of at least
4 one of a local station and a distant station,
5 wherein
6 the variable power amplification control unit modifies
7 the control ratio according to the detected state.

1 **Claim 16 (previously presented):** Radio communications
2 apparatus according to claim 15, wherein the variable power

3 amplification control unit modifies the control ratio based on
4 fuzzy control rules and fuzzy inference.

1 **Claim 17 (original):** Radio communications apparatus
2 according to claim 15, wherein the variable power
3 amplification control unit adaptively modifies the control
4 ratio according to the state of at least one of a local
5 station and a distant station.

1 **Claim 18 (original):** Radio communications apparatus
2 according to claim 13, wherein a control sensitivity of each
3 of the plurality of variable power amplifiers differs from
4 each other.

1 **Claim 19 (currently amended):** A radio communications
2 apparatus equipped with a transmission power control feature
3 for controlling a transmission power to be transmitted to a
4 distant station, comprising:
5 a power amplifier having separate bias systems for
6 amplifying a transmission signal;
7 a plurality of voltage controllers for controlling the
8 power amplifier via the separate bias systems; and
9 a control unit for individually controlling the
10 plurality of voltage controllers.

1 **Claim 20 (original):** Radio communications apparatus
2 according to claim 19, wherein the control unit for
3 controlling voltage controllers modifies a control ratio of
4 the voltage controllers and make at least one of series and
5 parallel control in the control range.

1 **Claim 21 (original):** Radio communications apparatus
2 according to claim 20, further comprising:
3 a detection unit for detecting a state of at least one
4 of a local station and a distant station wherein
5 the control unit for controlling voltage controllers
6 modifies the control ratio according to the
7 detected state.

1 **Claim 22 (previously presented):** Radio communications
2 apparatus according to claim 21, wherein the control unit for
3 controlling the voltage controllers modifies the control ratio
4 based on fuzzy control rules and fuzzy inference.

1 **Claim 23 (original):** Radio communications apparatus
2 according to claim 21, wherein the control unit for
3 controlling the voltage controllers adaptively modifies the
4 control ratio according to the state of at least one of a
5 local station and a distant station.

1 **Claim 24 (original):** Radio communications apparatus
2 according to claim 19, wherein the control sensitivity of each
3 of the plurality of variable power amplifiers differs from
4 each other.

1 **Claim 25 (previously presented):** A transmission power
2 control method for controlling the power to transmit to a
3 distant party, comprising the steps of:

4 controlling an adjustable digital-to-analog converter
5 for generating an analog baseband signal to be
6 input to a modulator for frequency-converting a
7 transmission signal to a signal in an IF band;

8 controlling first and second variable power amplifiers,
9 connected in series with each other, for variably
10 amplifying the transmission signal modulated by the
11 modulator;

12 a detection step of detecting a state of at least one of
13 a local station and a distant station; and

14 a modification step of modifying control ratios of the
15 first and the second variable power amplifiers
16 according to the detected state;

17 wherein at least one of series and parallel control in
18 a control range is made in the controlling the
19 first and second variable power amplifiers step,
20 and wherein, in the series control, the control
21 ratio of the first variable amplifier is set to 1

22 and the control ratio of the second variable
23 amplifier is set to 0, and wherein, in the parallel
24 control, a sum of the control ratios of the first
25 and second variable amplifiers is set to 1.

1 **Claim 26 (previously presented):** A transmission
2 power control method according to claim 25, wherein a
3 plurality of states of at least one of the local station and
4 the destination station are detected in the detection step,
5 and wherein the control ratios are modified by using fuzzy
6 control rules and fuzzy inference that are based on the
7 plurality of states in the modification step.

1 **Claim 27 (previously presented):** A transmission
2 power control method according to claim 25, wherein the
3 control ratios according to the state of at least one of the
4 local station and the distant station is adaptively modified
5 in the modification step.

1 **Claim 28 (previously presented):** A transmission
2 power control method according to claim 25, wherein a control
3 sensitivity of each of the first and second variable power
4 amplifiers differs from each other.

1 **Claim 29 (previously presented):** A transmission power
2 control method for controlling a power to transmit to a
3 distant party, comprising the steps of:
4 controlling first and second voltage controllers;
5 controlling, using said first and second voltage
6 controllers, a power amplifier for amplifying a
7 transmission signal;
8 the first voltage controller controlling a collector
9 voltage of the power amplifier, the second voltage
10 controller controlling a base voltage of the power
11 amplifier;
12 a detection step of detecting a state of at least one of
13 a local station and a distant station; and
14 a modification step of modifying control ratios of the
15 first and the second voltage controllers according
16 to the detected state;
17 wherein at least one of series and parallel control in
18 a control range is made in the voltage controller
19 controlling step, wherein, in the series control,
20 the control ratio of one of the voltage amplifiers
21 controllers is set to 1 and the control ratio of
22 the other is set 0, and wherein, in the parallel
23 control, a sum of the control ratios of the first
24 and second voltage controllers is set to 1.

1 **Claim 30 (previously presented):** A transmission power
2 control method according to claim 29, wherein a plurality of
3 states of at least one of the local station and the
4 destination station are detected in the detection step, and
5 wherein the control ratios are modified by using fuzzy control
6 rules and fuzzy inference that are based on the plurality of
7 states in the modification step.

1 **Claim 31 (previously presented):** A transmission power
2 control method according to claim 29, wherein the control
3 ratios according to the state of at least one of a local
4 station and a distant station are adaptively modified in the
5 modification step.

1 **Claim 32 (previously presented):** A radio communication
2 apparatus comprising:
3 a first variable power amplifier;
4 a second variable power amplifier connected in series
5 with said first variable power amplifier;
6 an adjustable digital-to-analog converter;
7 a modulator;
8 means for controlling the adjustable digital-to-analog
9 converter for generating an analog baseband signal
10 to be input to the modulator for frequency-
11 converting a transmission signal to a signal in an
12 IF band;

13 means for controlling first and second variable power
14 amplifiers for variably amplifying the transmission
15 signal modulated by the modulator;
16 a detection unit for detecting a state of at least one
17 of a local station and a distant station; and
18 means for modifying control ratios of the first and the
19 second variable power amplifiers according to the
20 detected state,
21 wherein at least one of series and parallel control in
22 a control range is utilized by the means for
23 controlling the first and second variable power
24 amplifiers, and wherein, in the series control, the
25 control ratio of the first variable amplifier is
26 set to 1 and the control ratio of the second
27 variable amplifier is set to 0, and wherein, in the
28 parallel control, a sum of the control ratios of
29 the first and second variable amplifiers is set to
30 1.

1 **Claim 33 (previously presented):** The apparatus of claim
2 32, wherein a plurality of states of at least one of the local
3 station and the destination station are detected by the
4 detection unit, and wherein the control ratios are modified by
5 using fuzzy control rules and fuzzy inference that are based
6 on the plurality of states in the means for modifying.

1 **Claim 34 (previously presented):** The apparatus of claim
2 32, wherein the control ratios according to the state of at
3 least one of the local station and the distant station is
4 adaptively modified in the means for modifying.

1 **Claim 35 (previously presented):** The apparatus of claim
2 32, wherein a control sensitivity of each of the first and
3 second variable power amplifiers differs from each other.

1 **Claim 36 (previously presented):** A radio communication
2 apparatus comprising:
3 a first voltage controller;
4 a second voltage controller;
5 means for controlling said first and said second voltage
6 controllers;
7 a power amplifier for amplifying a transmission signal;
8 means for controlling, using said first and second
9 voltage controllers, said power amplifier, wherein
10 the first voltage controller controls a collector
11 voltage of the power amplifier and the second
12 voltage controller controls a base voltage of the
13 power amplifier;
14 a detection unit for detecting a state of at least one
15 of a local station and a distant station; and

16 means for modifying control ratios of the first and the
17 second voltage controllers according to the
18 detected state;
19 wherein at least one of series and parallel control in
20 a control range is made in the means for
21 controlling said first and said second voltage
22 controllers, wherein, in the series control, the
23 control ratio of one of the voltage controllers is
24 set to 1 and the control ratio of the other is set
25 0, and wherein, in the parallel control, a sum of
26 the control ratios of the first and second voltage
27 controllers is set to 1.

1 **Claim 37 (previously presented):** The apparatus of claim
2 36, wherein a plurality of states of at least one of the local
3 station and the destination station are detected by the
4 detection unit, and wherein the control ratios are modified by
5 using fuzzy control rules and fuzzy inference that are made
6 based on the plurality of states by the means for modifying.

1 **Claim 38 (previously presented):** The apparatus of claim
2 36, wherein the control ratios according to the state of at
3 least one of a local station and a distant station are
4 adaptively modified by the means for modifying.

1 **Claim 39 (previously presented):** The transmission power
2 control method according to claim 1, wherein said plurality of
3 variable power amplifiers are individually controlled such
4 that a function of an output of said amplifier unit to a
5 control voltage is substantially linear over a wider range of
6 said control voltage than is a function of each one of said
7 plurality of variable power amplifiers to said control
8 voltage.

1 **Claim 40 (previously presented):** The radio
2 communications apparatus according to claim 13, wherein said
3 plurality of variable power amplifiers are individually
4 controlled such that a function of an output of said amplifier
5 unit to a control voltage is substantially linear over a wider
6 range of said control voltage than is a function of each one
7 of said plurality of variable power amplifiers to said control
8 voltage.